ABSTRACT

BACK GROUND :

Oral cancer (OC) is one of the major health hazards in India, and approximately 80,000 new cases are diagnosed annually, mainly attributed to different forms of tobacco consumption. Oral cancer generally is preceded by early changes termed as oral potentially malignant disorders, such as leukoplakia, oral submucous fibrosis (OSMF). It has been established that oral potentially malignant disorders represent an increased risk of developing oral cancer with malignant transformation rates that vary from 0.6% to 36%. In recent years emphasis has been placed on detecting molecular markers (biomarkers) for oral cancer from body fluids such as serum, saliva and urine. Identification of molecular markers will help in diagnosing the neoplastic process at the initial stage. The present study was conducted to study the role of serum Levo - Fucose as an enzyme marker for oral cancer.

AIMS AND OBJECTIVES :

To evaluate the levels of serum Levo Fucose in oral cancer patients and to compare the levels of serum Levo Fucose in various clinical stages of cancer and in potentially malignant disorders. To evaluate the effectiveness of serum Levo Fucose as a diagnostic marker for oral cancer.

METHODOLOGY :

The study consists of 40 patients divided in to four groups. Group I consist of 10 healthy volunteers, Group II consist of 10 patients with oral potentially malignant disorder, Group III consist of 10 patients with oral cancer without nodal metastasis and Group IV consist of 10 patients with oral cancer with nodal metastasis. 5ml of blood is drawn from the study subjects. Serum was separated from the blood by centrifugation and used to estimate the levels of Levo-fucose. L-Fucose assay kit was used for estimation of fucose levels in the serum. Fucose estimation was done in an ELISA kit with wavelength set at 340 nm. The final readings were calculated to get the serum Levo Fucose level in mg%.

RESULTS :

The result showed that there was a significant increase in serum levo fucose level in patients with oral cancer compared to oral potentially malignant disorders and healthy controls with a statistically significant p valve of $p < 0.001$. There was no significant increase in serum levo fucose in patients with oral potentially malignant disorders compared to healthy controls with the p value of $p = 0.008$.

CONCLUSION :

Thus correlation was obtained between levo-fucose and oral cancer and the L-fucose levels can be used as a biomarker in identification of oral cancer.

KEY WORDS : Oral cancer, Levo-fucose, Biomarker